

ULTRASONIC INSPECTION METHOD AND SYSTEM THEREFOR

Abstract

A method and system for ultrasonically inspecting turbine wheels and other disk-shaped articles having a central opening and multiple secondary openings radially spaced outward from the central opening. At least one ultrasonic transducer is placed in at least one of the secondary openings of the wheel. The transducer is configured and oriented to perform a pulse-echo diagnostic technique on the wheel by emitting ultrasonic signals that intersect radials of the wheel at angles of approximately ninety degrees to the radials. The ultrasonic signals intersect the radials at points so that a plurality of points are located on a plurality of radials. The points define a locus of points through the volume of the wheel between the central opening and the secondary opening, such that the volume is inspected for defects. The transducer receives ultrasonic signals that are reflected from one or more points when a defect is encountered.